

## **Claims**

### **1. Bone fixation device with**

A) an intramedullary pin (1) with a longitudinal axis (17), which has a distal tip (2) intended for introduction into the medullary space and a proximal rear end (3) and

B) a bone plate (10), which is intended to lie in contact with the greater trochanter and is disposed at the proximal rear end (3) of the medullary pin (1),  
characterized in that

C) the medullary pin (1), in its proximal half (7) facing the proximal rear end (3), has at least one transverse borehole (6) passing through it for accommodating a hip screw (30) and

D) the bone plate (10) ends proximally above the transverse borehole (6).

2. The device of claim 1, characterized in that the bone plate (10) has an angled tab (22), the center of gravity of which, if projected onto a cross-sectional area (19) orthogonal to the longitudinal axis (17) of the medullary pin (1), lies on a radius (21), which encloses in this cross-sectional area (19) an angle  $\beta$  of between  $0^\circ$  and  $+100^\circ$  and preferably of between  $+40^\circ$  and  $+50^\circ$  with the projection (18') of the borehole axis (18) of the proximal transverse borehole (6).

3. The device of claim 1, characterized in that the bone plate (10) has an angled tab (22), the center of gravity of which, if projected onto a cross-sectional area (19) orthogonal to the longitudinal axis (17) of the medullary pin (1), lies on a radius (21), which encloses in this cross-sectional area (19) an angle  $\beta$  of between  $0^\circ$  and  $-100^\circ$  and preferably of between  $-40^\circ$  and  $-50^\circ$  with the projection (18') of the borehole axis (18) of the proximal transverse borehole (6).

4. The device of one of the claims 1 to 3, characterized in that the medullary pin (1), in its distal half (4) facing the tip (2), has a further transverse borehole (5) passing through it for accommodating a locking screw (20).

5. The device of one of the claims 1 to 3, characterized in that the medullary pin (1), is provided with at least two transverse grooves (28) in its distal half (4) facing the tip (2),

6. The device of one of the claims 1 to 5, characterized in that the bone plate (10) and the medullary pin (1) are in one piece.

7. The device of one of the claims 1 to 5, characterized in that the bone plate (10) can be fastened to the proximal rear end (3) of the medullary pin (1).

8. The device of one of the claims 1 to 7, characterized in that the medullary pin (1), in its proximal half (7) facing the proximal rear end (3), has a second transverse borehole (8), which passes through it for accommodating a second hip screw (31).

9. The device of one of the claims 1 to 8, characterized in that the bone plate (10) has a circular borehole (13) and that the proximal rear end (3) of the medullary pin (1) has a circularly cylindrical elevation (9) corresponding thereto, so that the bone plate (10) may be disposed about this elevation (9).

10. The device of one of the claims 1 to 9, characterized in that the bone plate (10) has a cam (12), which can be lowered into a depression (14), provided at the proximal rear end (3) at the medullary pin (1), so that the bone plate (10) can be connected with the medullary pin (1) in a defined relative position and secured against rotation.

11. The device of claims 9 or 10, characterized in that the circularly cylindrical elevation (9) at the proximal rear end (3) of the medullary pin (1) has an external thread (15).

12. The device of claim 11, characterized in that it comprises a nut (40) with an internal thread (41) corresponding to the external thread (15).

13. The device of one of the claims 2 to 12, characterized in that the tab (22), viewed parallel to the longitudinal axis (17), is guided around the medullary pin (1) at an angle  $\alpha$ , the angle  $\alpha$  being between 10° and 200°.

14. The device of one of the claims 1 to 13, characterized in that the bone plate (10) has at least one and preferably two perforations (11).